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The
GREEN Olympiad
and
TERRAQUIZ

a knowledge book on the environment

teri

The GREEN Olympiad and TERRAQUIZ

a knowledge book on the environment

Editors
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Sanjay Gupta

The first word
R K Pachauri

Think big
Strike big

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The first word

TERI is a leading institute in India, deeply committed to sustainable development. Every effort is made at TERI for wide dissemination of research results and sharing of information and experiences. The institute has dedicated itself to the task of creating an informed citizenry in India, whereby environmental considerations become part of the daily decision-making process. Students enjoy a special status in this effort: it is TERI's hope that they shall form an environmentally enlightened leadership in the year 2047, when India celebrates a hundred years of its independence.

With this hope and vision, TERI launched India's first environmental examination, the GREEN Olympiad, on 21 April 1999, the eve of Earth Day. Over 1000 schools from 10 cities in India took part in the written examination. In 2000, the GREEN Olympiad witnessed a quantum jump in numbers and was relayed in 200 cities, towns, and districts of India. More than 50 000 children from 6000 schools spread over Bhuj in Gujarat to Agartala in Tripura and Leh in Jammu and Kashmir to Port Blair in the Andaman and Nicobar islands participated. All set to cross borders this year, the GREEN Olympiad 2001 will have, besides 100 000 Indian students, participants from Russia, Nepal and the United Arab Emirates. The GREEN Olympiad evolves into a televised environmental quiz titled TERRAQUIZ, telecast on Doordarshan, India's premier television channel.

The GREEN Olympiad and TERRAQUIZ have been developed as tools of environmental education for school children, essentially in the shape of an objective-type quiz on environmental issues, local and global. The numerous questions posed evolve from topics of daily concern: air and water pollution, environment-friendly initiatives and practices, land and water resources, forests, wildlife, oceans, social and economic aspects of natural resources, global climate change, and the roles to be played by various segments of society to improve our environment.

It is our hope that this well-researched question bank and the unique nature of the questions developed by TERI would not only help educate and sensitize our students all over India but would also encourage and enhance the interest of children in the environment and inspire them to be sensitive towards it.

Dr R K Pachauri
Director-General
TERI

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Introduction

There is an environmental crisis developing on the earth. This is undoubtedly a result of the ever-increasing damaging human activities. The need of the hour is to find ways and means to sensitize people and build awareness to control this damage.

TERI recognizes today's youth as powerful agents of change and has taken several initiatives to cultivate greater interest and awareness in improving and understanding the environment.

One such initiative is the GREEN Olympiad, the first national environmental exam launched in 1999. In 2000, it was conducted in 208 cities and towns across India in association with the Kendriya Vidyalaya Sangathan, India's premier educational institution. In addition, the Ministry of Environment and Forests, Government of India, has instituted scholarships for meritorious students. Over 80 000 students, representing around 8000 schools, participated in this exam on the Earth Day, 22 April 2000.

The questions of the GREEN Olympiad are designed such that they not only test the knowledge of students but also educate and sensitize them in the process. Further, they prompt participants to critically analyse environmental issues.

The top 32 performing schools are selected to take part in TERRAQUIZ, a 13-episode environmental quiz programme for television. TERRAQUIZ 2000 is being telecast on Doordarshan National network. The questions emanate from topics of daily concern, both local and global. Attractive audio-visuals impart a unique flavour to this quiz.

Air

The quality of air in our urban areas is anything but fresh: a cloud of smoke from the exhaust of a bus, car, or scooter; smoke billowing from a factory chimney; fly ash generated by thermal power plants; and speeding motor vehicles causing dust to rise from the roads, all lead to air pollution.

Air pollution has now become a major global problem causing great concern, both in urban and in rural areas. The Industrial Revolution in Europe in the 19th century first gave rise to the phenomenon of air pollution. As the human society became increasingly dependent on machines for various functions, the level of pollutants in the air kept increasing. Industries, vehicles, population increase, and urbanization are some of the major factors responsible for air pollution. Rural households rely on fuels such as wood and coal for cooking; these lead to smoke in kitchens and, consequently, in the house.

Natural occurrences such as dust storms in desert areas and smoke from forest fires and grass fires contribute to chemical and particulate pollution of the air. The source of pollution can be in one country but its impact may be felt elsewhere. The discovery of pesticides in Antarctica, where they have never been used, suggests the extent to which aerial transport can carry pollutants from one place to another. Probably, the most important natural source of air pollution is volcanic activity, which at times pours great amounts of ash and toxic fumes into the atmosphere. The eruptions of such volcanoes as Krakatoa in Indonesia and Katmai in Alaska, USA, have been related to measurable climatic changes.

In India, outdoor air pollution is restricted mainly to the urban areas. This is due to the presence of a large number of vehicles and industries, which emit pollutants in these areas.

Forest and biodiversity

The forest is a complex ecosystem consisting mainly of trees that buffer the earth and support a vast range of life forms. A large variety of trees helps create a special environment, which, in turn, affects the kinds of animals and plants that can exist in the forest. Trees are an important component of the environment. They clean the air, cool it on hot days, conserve heat at night, and act as excellent sound absorbers.

Over the years, there has been a steady decrease in the forest cover as large areas are being depleted at a rate unthinkable 50 years ago. There are a number of reasons for this: agriculture, industry, housing, rising population, and other economic activities.

Human beings first began life as forest dwellers. Their transition from food gatherers to food growers did not end their dependence on the forest. In fact, even today, humans are dependent on the forest for a large number of their needs such as food, paper, timber, fuelwood, medicine, and fodder.

In the last 50 years, India has made rapid progress in agriculture, industry, and infrastructure, and all this have had a negative bearing on the natural resources. Added to this, the growing population put relentless pressure on forestland and its resources to meet housing needs.

Measures have to be taken to save the forests from further depletion and degeneration. Governments and communities should take steps to ensure that trees are planted on a large scale. The community should be consulted and trees that will meet their requirements should be planted. Further depletion of the existing forest area must be prevented.

Two of the 18 biodiversity hot spots of the world are located in India, which boasts of a vast reserve of biological resources. But this biodiversity is at a great risk of extinction because of a number of factors.

Increasing human population and their ever increasing consumption levels are some of the causes that have led to over exploitation and manipulation of ecosystems.

To prevent such losses, the Government of India is setting up biosphere reserves in different parts of the country. These are multipurpose protected areas to preserve the genetic diversity in different ecosystems. Till 1999, 10 biosphere reserves had been set up.

Energy

The discovery of fire by man led to the possibility of burning wood for cooking and heating, thereby using energy. For several thousand years, human energy demands were met only by renewable energy sources: sun, biomass (wood, leaves, twigs, etc.), hydel (water) and wind power. As early as 4000 to 3500 BC, sailing ships and windmills were developed to harness wind energy. With the use of hydropower through water mills or irrigation systems, things began to move faster. Fuelwood and dung cakes are a major source of energy in rural India even today.

With the advent of the Industrial Revolution, the use of fossil fuels began growing as an increasing number of industries were established. In the 20th century, it became evident that the consumption of non-renewable sources of energy had caused more environmental damage than any other human activity. Electricity generated from fossil fuels such as coal and oil has led to high concentrations of harmful gases and particulate matter in the atmosphere. Vehicular pollution is also a grave problem. Worldwide, the number of motor vehicles has more than doubled since 1970.

Due to the problems associated with fossil fuels, alternative sources of energy have become important and relevant in today's world. These sources, such as the sun and wind, can never be exhausted and are therefore called renewable. Also known as non-conventional sources of energy, they can reduce or eliminate emissions. Using them can significantly reduce chemical, radioactive, and thermal pollution. They are viable sources of clean and limitless energy and are available locally.

Total commercial energy consumption has been growing tremendously since the last decade. Per capita commercial energy consumption in low-income countries has more than doubled during this period. However, about 15% of the world's population living in the wealthy industrialized nations still consumes over half the energy used in the world.

Global climate

Human activities over the last two centuries have had substantial effect on the global climate and brought about changes that had not been foreseen till a few decades back. Today, global warming has emerged as one of the most important environmental issues to confront humankind. Since the 19th century, scientists have known that the presence of CO_2 (carbon dioxide) in the atmosphere helps to retain the incoming heat energy from the sun, thereby increasing the earth's surface temperature. Today, we know that CO_2 is only one of the several greenhouse gases in the atmosphere; a few of the others being methane, nitrous oxide, ozone, and water vapour. These raise the temperature of the earth and have depleted the ozone layer in the upper parts of the atmosphere. Moreover, a globally decreasing forest cover means that there are fewer trees around to absorb this CO_2 and consequently, more global warming follows.

The direct impacts of climate change include rising temperatures, decreasing or increasing precipitation levels, and sea-level rise. These, in turn, have an impact on natural ecological systems, crops, human health, soil erosion, water resource use, power generation, tourism, industry, and infrastructure. It has also led to freakish weather patterns such as unexpected droughts, cyclones, and sudden snowstorms. Since the ice age the world is experiencing the biggest melting of polar ice caps. Much of Siberia is 3 to 5 °C warmer than it was at the beginning of the 20th century. Permafrost (permanently frozen land) is melting in Siberia, Alaska, and Canada. On the islands of Antarctica, the Adelie penguin population has decreased in the past 20 years due to the retreat of sea ice from which they feed.

However, there is still no agreement regarding the magnitude and rate of occurrence of these impacts or the actions that should be taken to reverse the effects of global climate change.

Land

Land, with its many shades of greens and browns, belongs to us. It is our duty to look after its well-being. However, over the years, we have caused grave damage to it by polluting, overusing, and misappropriating its resources. The unsystematic dumping of waste, poor agricultural practices, depletion of forests and its resources, and mining activities are some of the ways in which we are gradually destroying it. Overuse and expansion of agricultural land and activities using methods such as irrigation, fertilizers, and pesticides have led to degradation of land and a rise in salinity levels. Various factors have been responsible for an increase in soil erosion. Forests are cleared to either make way for human settlements or for agricultural activities, thereby causing soil erosion and degradation. The increasing population has put pressure on the land, leading to an expansion in urbanization activities.

Rise in human population, modernization, and industrialization have been responsible for the biggest problem facing the land: the generation and disposal of solid waste. With the progress of civilization, the waste generated has become more complex in nature. It is now a major environmental problem as leachates from landfills and other dumping sites not only cause contamination of the land but also of water and air.

The impact of all human activity on the survival of life on earth has to be understood and solutions have to be found to maintain the ecological balance on the earth. Proper management and disposal methods have to be introduced to ensure that less damage is done.

Water

The earth is often referred to as the blue planet as it appears blue when viewed from space. This is because more than two-third of the earth is covered with water. However, only 3% of the world's water is fresh and only about 0.5% of it is accessible. The rest of the water is either in the form of seawater or locked up in icecaps or soil.

Worldwide, the consumption of water has increased so rapidly that today it is more than twice the rate of increase in population. Rising population, agricultural activities, and growing industries have all pushed up the demand for water.

Besides, water pollution is also a cause for concern. Water is polluted when substances that dissolve or remain suspended in the water are released into lakes, streams, rivers, and oceans. While dissolved and suspended pollutants invariably harm aquatic flora and fauna, some substances get deposited on the bottom and accumulate to such an extent that they interfere with the functioning of aquatic ecosystems. Increase in the pollution of water bodies and groundwater has become a major problem and has to be urgently tackled before it becomes any worse.

Sewage from houses and industrial wastes flow untreated into rivers and lakes. Deforestation in the hills is causing silt to rise in rivers. Groundwater, depleting fast in most states in India due to over exploitation, is being contaminated with industrial effluents in several places. The need of the hour is proper management and conservation.

Water plays a critical role in a country's welfare with links to its economic development. Of the 113 river basins in India, 14 are major basins, 44 are medium, and the rest minor. Over the years, the quality of water in these basins has deteriorated drastically. This water, which ultimately ends up in our households, is often highly contaminated and causes water-borne diseases.

Groundwater is polluted in both rural and urban areas. High levels of fluorides are found in parts of Rajasthan and Uttar Pradesh. Higher concentrations of chlorine can be seen in parts of Haryana and Uttar Pradesh.

The GREEN Olympiad

Instructions

1 The duration of the examination is 2 hours.
2 You are required to attempt a total 100 objective-type questions.
3 There will be no negative marking for questions answered incorrectly.
4 For each question answer by darkening the appropriate number with pencil for the most correct answer.
5 Only HB pencil should be used to darken the appropriate number.
6 Other than the answers, nothing else should be marked on the answer sheets.

Read the following passage and answer the related questions 1 to 5.

With the boom in population and industrial growth, the need for power has increased manifold. However, increasing thermal power generation comes with a price. It produces fly ash or finely divided particles of ash that arise from the combustion of coal. Indian coal contains up to 40% ash. According to one estimate, up to 150 million tonnes of fly ash will be produced in India in the year 2000, primarily by thermal power plants and, to a lesser extent, by cement and steel plants and railways.

Proper disposal of fly ash remains an enormous problem. Currently, it is being dumped on to wastelands, consuming around 30 000 hectares of land. Fly ash contains large amounts of unburned fuels and toxic heavy metals like lead, arsenic, cobalt, and copper. It is a source of groundwater contamination, since fly ash can leach into the subsoil and pollute it. It is also a health hazard as the ash from dumping sites can become airborne and enter the lungs, causing respiratory problems. Fly ash is a near-dead substrate which, when dumped on to a site, makes it barren and unfit for vegetation. However, ongoing research is attempting to convert this waste into wealth with considerable environmental benefits. Fly ash could be used as a superior building material with benefits like lighter weight, greater strength, better thermal insulation, and reduced costs over conventional clay bricks.

An attempt to practise floriculture on fly ash dumps with suitable addition of organic matter and symbiotic fungi has been successful. Commercially important trees and plants have been grown successfully, thus opening viable avenues for fly ash management.

Questions

1 Which sector is mainly responsible for the production of fly ash?
- a Cement
- b Thermal power
- c Railways
- d Iron and steel

2 Fly ash bricks are an environmentally sound alternative to clay bricks. What is the effect of conventional clay bricks activity on the environment?
- a Renders land barren
- b Facilitates soil erosion by wind & water
- c Increases suspended particulate matter in air
- d All of the above

3 What kind(s) of pollution is fly ash responsible for?
- a Air pollution
- b Water pollution
- c Land pollution
- d All of the above

4 Which of the following is the main source of fly ash
- a Water
- b Sun
- c Coal
- d None of the above

5 Which of the following is a major air pollutant?
- a Plastic
- b Bacteria
- c Fly ash
- d None of the above

In the following set of questions, choose the correct answer. The answers are at the end of this section.

Questions

6 To protect wild animals and their habitat the government has established more than 89 national parks all over the country. Which was the first national park to be established in India?

a Ranthambhor
b Kanha
c Corbett
d Bandipur

7 A number of revolutions occurred in the 19th century. Which one of them saw the beginning of air pollution on a large scale?

a French Revolution
b American Revolution
c Industrial Revolution
d Green Revolution

8 10 000 species of insects are regarded as pests, and overuse of commercial pesticides to get rid of them has caused long-lasting environmental damage. Name a natural, easily biodegradable alternative to synthetic chemicals that affects 40 major insect pests, is fairly specific, and is harmless to birds and mammals.

a Peepal
b Neem
c Turmeric
d Tulsi

9 Mangroves are forest ecosystems that can survive both in salt and in fresh water conditions. Name the largest mangrove forest in India, which has a diverse variety of plant and animal species.

a Ranthambhor Sanctuary
b Sunderbans
c Kaziranga
d Namdapa

10 Greenhouse gases have contributed largely to global warming. Which one of the following is not a greenhouse gas?
a Methane
b Nitrous oxide
c Hydrogen sulphide
d Carbon dioxide

11 Scientists have identified areas on the earth such as forest cover and oceans, which have the capacity to take in greenhouse gases and clean the air around us. What are these areas known as?
a Green belts
b Natural sinks
c Clean area
d Cooling agents

12 India is known all over the world for its traditional, indigenous medical system. Which of the following is not a traditional system?
a Ayurvedic
b Unani
c Allopathy
d Pranic healing

13 Which of the following sectors is the biggest contributor to greenhouse gas emissions in India?
a Transport
b Commercial
c Energy
d Domestic

14 Which of the following items of everyday use is non-biodegradable?
a Chewing gum
b Ball point pen
c Car tyres
d All of the above

15 In 1989, the greatest ecological threat in the history of this continent was the sinking of an Argentinian supply ship carrying 1 million litres of diesel oil off its western peninsula. The unique flora and fauna of the region faced the threat of extinction and the effects of this oil spill are likely to be felt till 2100 AD. Which is this continent?

a Asia
b Africa
c Antarctica
d Arctic

16 Dung cakes are second only to fuelwood as the most preferred form of biomass energy in the domestic sector in India. Besides its value as fuel, what are other uses of animal dung in rural areas?

a Fertilizer for fields
b Plaster on walls for insulation
c Insecticide on walls and floors
d All of the above

17 Industries which consume large amounts of fossil fuels are the largest emitters of this gas which causes acid rain. The extent of this problem was realized in 1981 when a large area around Spirit Lake, New York, USA, was affected by acid rain. Which is this harmful gas?

a Sulphur dioxide
b Hydrogen sulphide
c Ozone
d Carbon dioxide

18 'Water harvesting' has emerged as a sensible method of meeting the water shortfall in a cost-effective manner. What is meant by this term?

a Collection of water from rivers
b Collection of rainwater on rooftops and in storage tanks to recharge groundwater
c Harvesting of water from tubewells
d None of the above

19 The World Health Organization estimates that 80% of illness in the developing world stems from lack of safe water and sanitation. Malaria, yellow fever, dengue, and elephantiasis: in which category do the above diseases fall ?
a Those caused by intake of contaminated food or water
b Those caused by lack of or unhygienic washing
c Those transmitted by insects that breed or live near water
d None of the above

20 Which was the first country in the world to establish an official government family planning programme in 1952?
a USA
b China
c India
d Japan

21 Currently, protected areas cover over 5% of the earth's land area. The world's largest protected area, which covers an area of 972 000 km^2, is the
a Gir Forest
b Greenland National Park
c Yellow Stone National Park
d Manas Wildlife Sanctuary

22 Wetlands are very rich and diverse ecosystems. Of the wetlands of international importance, 45% are subject to moderate or high threat. Which convention signed in Iran protects this specific ecosystem (wetlands) on a global basis?
a The Vienna Convention
b The Ramsar Convention
c The Basel Convention
d CITES (Convention on International Trade in Endangered Species)

23 Which major project in the north-western part of Rajasthan provides irrigation facilities to over 2.5 million hectares of the Thar desert of which 1.2 million hectares is now cultivable area?
a Bhakra Nangal Project
b The Indira Gandhi Nahar Project
c The Tehri Dam Project
d The Narmada Valley Project

24 This state with the largest forest cover in the country is also the second richest in mineral deposits. Its forests are being destroyed due to open-cast mining of coal, iron ore, bauxite, and copper. Name it.

a Uttar Pradesh
b Madhya Pradesh
c Himachal Pradesh
d Arunachal Pradesh

25 The village of Ralegaon Siddi in Maharashtra is taken as a role model for other villages by the government. It is an example of sustainability through use of non-conventional sources of energy, water harvesting, and plantation of trees. Name the person who is largely responsible for these efforts.

a Baba Amte
b Anna Hazare
c Sharad Pawar
d Jaiprakash Narayan

26 A species is said to be extinct when it has not been seen for over 50 years. On the Indian subcontinent a number of birds and animals have become extinct. One extinct animals is the

a Golden languar
b Bengal tiger
c Rhinocerous
d Indian cheetah

27 This farmers' movement was launched in the Garhwal region of the Himalayas in 1989 to conserve landraces (traditional varieties) and to reinstate the right of farmers to save their germplasms and seeds. Name it.

a Anaj Bachao Andolan
b Beej Bachao Andolan
c Garhwal Movement
d Landrace Movement

28 It grows extensively in India, especially in the north-east and is used mainly for making paper, furniture, and household goods. Filament made from it was used successfully by Thomas Alva Edison for the first light bulb. Name it.

a Cane
b Teak wood
c Bamboo
d Sheesham

29 Of the world's 18 biodiversity hotspots, two are in India. One of them is in the Western Ghats. Where is the other one?

a Eastern Himalayas
b South Indian Nilgiris
c The Madhya Pradesh forests
d None of the above

30 Due to extensive deforestation and other human activities, a large number of animals are being listed as endangered. The only ape found in India has been listed as an endangered animal. Name it.

a Slow loris
b Golden languar
c Hoolock gibbon
d Rhesus monkey

31 Excess fluoride in drinking water is known to cause fluorosis, a major health problem, in many parts of India. What are the symptoms of this disease?

a Brain damage
b Hair loss
c Stomach problems
d Yellow teeth and crippling

32 A much cheaper and lighter fuel extracted from crude oil is used to adulterate petrol in the ratio 3:1 (adulterant:petrol). It causes damage to the vehicle engine besides leading to high emission levels. Name this common adulterant of petrol that most easily escapes detection.

a Diesel
b Kerosene
c Naphtha
d Liquefied natural gas

33 'The earth has enough for everyone's needs but not for everyone's greed.' Who said these famous words?

- a Rabindranath Tagore
- b Jawaharlal Nehru
- c Mahatma Gandhi
- d Indira Gandhi

34 Human activities do not contribute to the occurrence of this natural hazard. Name it.

- a Famine
- b Volcanic eruptions
- c Landslides
- d Floods

35 Miniature batteries used to power watches and cameras are discarded once they run out. Their casing erodes quickly, releasing a pollutant into the subsoil and groundwater where it forms the causal agent of the 'minamata' disease. Name this pollutant.

- a Lead
- b Arsenic
- c Mercury
- d Cadmium

36 The GEF (Global Environment Facility) was created in 1991 as a joint effort of the World Bank, UNEP (United Nations Environment Programme) and UNDP (United Nations Development Programme) to address issues like desertification, global warming, international waters and biodiversity. Where was the first GEF assembly held in 1998?

- a Montreal
- b Vienna
- c Stockholm
- d New Delhi

37 When and where was the first atom bomb dropped which caused the highest radioactive pollution in the history of mankind?

- a Nagasaki, 9 August 1945
- b Hiroshima, 6 August 1945
- c Hiroshima, 15 July 1942
- d Nagasaki, 6 August 1942

38 This man, through his cartoons, was the first to draw the attention of the masses to animals, promoting feeling of love and attachment towards them. Name him.
a K Shankar Pillai
b Jim Davis
c Walt Disney
d R K Laxman

39 Certain ecosystems have a great diversity of species of plants and life due to the conducive weather conditions. Which of the following has the maximum diversity?
a Deserts
b Rainforests
c Grasslands
d Pine forests

40 The Valley of Flowers is well known all over the world for its beauty and magnificence. Where is it located?
a Garhwal
b Alps
c Austria
d Alaska

41 Which form of cancer is caused due to the harmful ultra violet radiation of the sun?
a Bone cancer
b Skin cancer
c Lung cancer
d Liver cancer

42 One of the major problems faced by all cities is vehicular pollution. We can help solve this problem to some extent by using environment-friendly forms of transport. Which is the most economical and pollution-free form of transport?
a Solar car
b Electric vehicle
c Bicycle
d CNG car

43 Of the waste generated in the household, which part has an excellent recycling potential?
- a Organic waste
- b Metal
- c Plastic
- d Glass

44 Demography is the statistical study of one of the following.
- a Human life
- b Human habitat
- c Human society
- d Human population

45 Aquatic life in rivers and streams utilizes DO (dissolved oxygen) for respiration. However, pollution of our water bodies causes a decline in the DO levels affecting aquatic life. Which of the following contributes the most towards water pollution?
- a Power plants
- b Sewage from households
- c Refineries
- d Iron and steel plants

46 Bagasse-based cogeneration is being used to generate electricity in many factories in India. What is it derived from?
- a Oil
- b Sugar cane
- c Alcohol
- d Paper

47 In which area does the potential for cogeneration mainly lie?
- a Households
- b Shops
- c Factories
- d All the above

48 Which among the following has the highest efficiency for production of electricity?
a Fuel cell
b Coal power plant
c Hydel power plant
d Inverter

49 Watershed management is very relevant in today's world, as conservation of water is becoming very important and essential. What is a watershed management programme?
a A programme of afforestation to facilitate rains
b A programme to arrest rainwater on hill slopes to conserve soil and water
c A programme of water collection in villages
d A programme of rainwater collection in tanks to recharge groundwater

50 Name a region of India, which is on the international oil tanker route and faces constant threat of oil spills and sludge disposal problems.
a Lakshadweep Islands
b Kanyakumari
c Andaman and Nicobar Islands
d Bombay High

Answers
1b 2d 3d 4c 5c 6c 7c 8b 9b 10c 11b 12c 13c 14d 15c 16d
17a 18b 19c 20c 21b 22b 23b 24b 25b 26d 27b 28c 29a 30c 31d
32c 33c 34b 35c 36d 37b 38c 39b 40a 41b 42c 43a 44d 45b
46b 47c 48c 49b 50c

TERRAQUIZ

Round 1

Air

Team A

1 Which has been the biggest industrial chemical disaster in India?

2 From which substance is carbon dioxide commercially produced?

Team B

1 Name any two gases produced by internal combustion engines of vehicle that are destroyed by the catalytic converter.

2 During which festival in India does the air get most polluted?

Team C

1 In recent times, which pollutant has been phased out from petrol in mos cities in India?

2 Which group is more vulnerable to indoor air pollution in households: men or women?

Team D

1 In which layer of the atmosphere does all the weather phenomena take place?

2 Which sector contributes most to air pollution in urban areas in India?

Forest and biodiversity

Team A

3 In which country is one-third of the world's rainforests located?

4 Name the most valuable forestry tree associated with the smuggler Veerappan.

Team B

3 Through what process does a plant capture light and energy from the sun?

4 What was the one characteristic of the dodo that caused its extinction?

Team C

3 In which city of India is the crocodile bank located?

4 Which animal is the symbol of the WWF (Worldwide Fund for Nature)?

Team D

3 What is the art of stuffing animals for display known as?

4 Which tree in North India almost exclusively supplies wood for making cricket bats?

Energy

Team A

5 Name the substance that is a waste from coal processing and oil refining and is used for road construction.

6 Solar power only boils water when the temperature is high (in hot climate). True or false?

Team B

5 Which mechanized mode of transport is most environment-friendly apart from being a good form of exercise?

6 These are non-renewable sources of energy that have caused great damage to the environment. They are found below the earth's surface and are collectively known as

Team C

5 This is a device that converts the sun's energy into electrical energy. It is known as

6 Lignite is essentially an inferior quality of coal. 99% of India's lignite reserves are found here. Name the place.

Team D

5 Natural gas, the world's most abundant fossil fuel after coal, contains predominantly which gas?

6 What is the full form of CNG?

Global climate

Team A

7 What are areas of calm along the tropics popularly known as?

8 By what name are cyclones referred to in the United States if America?

Team B

7 The concentration of which greenhouse gas can be reduced by preventing forest depletion?

8 This side of a mountain receives scanty rainfall. What is it better known as?

Team C

7 Which is the most abundant greenhouse gas?

8 In which city was the Earth Summit held in 1992?

Team D

7 Which city-nation was the first to introduce quarantine laws in the medieval period?

8 Name the wind that brings heavy rainfall to India during the summer months. Its name in Arabic means 'season'.

Land

Team A

9 Black lung disease occurs mainly among coal miners or quarry workers?

10 Which agricultural practice is now a major cause of soil salinity, especially in arid tropics, where rainfall is low and rates of evaporation high? In this practice, water is brought to the fields by artificial means.

Team B

9 Malaria is rampant in the tropical regions. Which mosquito causes this disease?

10 In this method of propagation of plants, isolated cells are used to grow the entire plant. What is this method known as?

Team C

9 In this method of pest control, one creature is used to suppress another. For example, if snakes are encouraged in an area, the rodent population will be controlled. What is this method better known as?

10 What is the common local term for shifting cultivation?

Team D

9 In which state of India is the mineral thorium, which is used in nuclear reactors, found?

10 Which industry consumes the largest amount of wood?

Water

Team A

11. Name the underground layer where freshwater is found.

12. This is a semi-closed water body where salt and fresh water meet. What is it better known as?

Team B

11. Johads are built to harvest water in many parts of India. What are these?

12. Which city releases the highest amount of domestic sewage into the River Yamuna?

Team C

11. This place in India receives the heaviest rainfall but has an acute shortage of water. Name it.

12. What are the seven sacred rivers collectively known as to the Hindus?

Team D

11. What ecosystem does a Ramsar site denote?

12. What is the medium of infection of hepatitis or jaundice: air, water, or land?

Score sheet

ROUND 1

Topic / question	Team A		Team B		Team C		Team D	
	Answer	Score 5	Answer	Score 5	Answer	Score 5	Answer	Score 5
Air								
1	Union carbide plant gas leak (Bhopal)		Nitrogen oxides, CO_2 and unburned hydrocarbons		Lead		Troposphere	
2	Chalk or limestone		Diwali		Women		Transport	
Forest and biodiversity								
3	Brazil		The process of photosynthesis		Chennai		Taxidermy	
4	Sandalwood		It is a flightless bird		The Giant Panda		Willow tree	
Energy								
5	Tar		Bicycle		Photovoltaic cells		Methane (95%–99%)	
6	False		Fossil fuels		Neyveli in Tamil Nadu		Compressed natural gas	
Global climate								
7	Horse latitudes		Carbon dioxide		Water vapour		Venice	
8	Hurricanes		The leeward side or the rain shadow area		Rio de Janeiro, Brazil		Monsoon	
Land								
9	Coal miners		Anopheles		Biological control of pests		Kerala	
10	Perennial irrigation		Tissue culture		Jhoom cultivation		Paper and pulp	
Water								
11	Aquifer		Earthen check dams		Cherrapunji		Wetland	
12	Estuary		Delhi		Sapta Sindhu		Water	

Round 2

Air

Team A

1 In India, rural women are more vulnerable to indoor air pollution. Why is this so?

2 What is the colour of the gas carbon monoxide?

Team B

1 What is smog a combination of?

2 Which among the following is not in the vehicular exhaust: ammonia, nitrogen dioxide, and lead?

Team C

1 What is the full form of SPM?

2 Which is the nodal Union Ministry for implementation of pollution related norms in India?

Team D

1 Which traditional form of fuel is used the most in Indian households?

2 Sulphur dioxide is mainly released by burning of these two fossil fuels. Name them.

Forest and biodiversity

Team A

3 Which is the only species of red deer found in India? Hint: it is found in Dachigam National Park, close to Srinagar.

4 Name the most diverse and productive marine ecosystems of the world.

Team B

3 All coniferous trees have a cone. What is this cone made of?

4 What is the illegal hunting of wild animals known as?

Team C

3 Hard knots of which tree are utilized for making tobacco pipes?

4 What method is used for estimating the tiger population in the wild: pug marks or waterhole count?

Team D

3 What is the tusk of an elephant known as in the illegal wildlife products market?

4 Which is the most common tree found in Sunderban Mangrove Forest?

Energy

Team A

5 Name the state in which the first oil well in India was drilled.

6 Which literary figure fought with windmills believing them to be giants?

Team B

5 Where is the world's largest solar power plant located?

6 Which is the major renewable substitute for fuelwood in rural households?

Team C

5 In which state is India's largest solar power plant coming up?

6 What energy is responsible for naturally occurring hot geysers?

Team D

5 Which country was the first to use geothermal energy to generate power?

6 Compared to an ordinary lamp that gives the same amount of light, how much energy does a compact fluorescent light save?

Global climate

Team A

7 Large tidal waves caused by underwater earthquakes or volcanic eruptions occur mainly in the sea around Japan. What are these waves known as?

8 Name the most commonly used CFC (chlorofluorocarbon) in refrigerators?

Team B

7 Besides CFCs, name any one ozone depleting chemical which is also being phased out in the time frame specified by the Montreal Protocol.

8 Name a major port in Orissa that was damaged by the cyclone in October 1999.

Team C

7 What is the flagship of Greenpeace called?

8 Which country is the largest emitter of greenhouse gases?

Team D

7 Name the hot dry wind that blows from Africa to the Mediterranean regions.

8 When was the UN Convention on Climate Change introduced?

Land

Team A

9 What is the main difference between the rabi and the kharif crops?

10 Thunderstorms and lightening deliver a large amount of which element from the air to the soil?

Team B

9 Who is known as the 'Father of genetics'?

10 Due to the construction of the Indira Gandhi Canal, there has been waterlogging and salinity problems. It has also led to a rise in the number of cases of this parasite-related disease. Name the disease.

Team C

9 Which insect is responsible for the spread of the plague to other animals and creatures?

10 What makes rice husk termite resistant?

Team D

9 How does the large-scale killing of snakes lead to an increase of rodents in farms?

10 What is the full form of DDT?

Water

Team A

11 What is the arresting of rainwater on hill slopes in order to conserve soil and water known as?

12 What type of environmental disaster has led to the usage of double-hulled ships?

Team B

11 Name the most damage causing natural hazard responsible for about 40% of damage caused by all natural phenomena.

12 Brackish water lakes are natural salt-water lakes. Phuliket is one such lake of India that used to have direct connections with the Bay of Bengal. Name the other famous lake located in Orissa.

Team C

11 Which Indian river is also known as the Tsang Po, Dibang, Siong, and Meghna along its route?

12 Which is the state in which all the 31 districts have high fluoride content in groundwater?

Team D

11 Reefs are formed due to the secretion by which marine organisms?

12 Which city in India has the largest number of freshwater tanks?

Score sheet

ROUND 2

Topic / question	Team A		Team B		Team C		Team D	
	Answer	Score 5	Answer	Score 5	Answer	Score 5	Answer	Score 5
Air								
1	Fuel wood is used for cooking and heating and the women spend more time indoors than the men		Fog and smoke		Suspended particulate matter		Wood	
2	It is colourless		Ammonia		Ministry of Environment and Forests		Coal and oil	
Forest and biodiversity								
3	Endangered Hangul or the Kashmir stag		Of tiny leaves		Teak		Ivory	
4	Coral reefs		Poaching		Pug marks		The Sundari tree	
Energy								
5	Assam		California		Rajasthan		Italy	
6	Don Quixote		Biogas or dung cakes		Geothermal energy		50%–75%	
Global climate								
7	Tsunami		Halons and carbon tetrachloride		The Rainbow Warrior		Sirocco	
8	Freon		Paradip		USA		1992	
Land								
9	Rabi is the winter crop and kharif is the summer crop		G Mendel		The rat flea (oriental)		Snakes feed on rats. If they are killed the number of rodents will increase	
10	Nitrogen		Malaria		It contains naturally occurring silicon		Diphenyldichlorotrichloroethane	
Water								
11	Watershed programme		Floods		Brahmaputra		Corals	
12	Oil spills		Chilika Lake		Rajasthan		Bangalore	

Round 3

Air

Team A

1 Which pollutant does electrostatic precipitators remove from flue gas in power plants?

2 Which fuel used for household cooking causes the least amount of indoor air pollution?

Team B

1 Why is CO_2 (carbon dioxide) emitted by vehicles?

2 Which was the first major act of legislation to regulate air pollution in India?

Team C

1 What was the primary purpose for the ban imposed on burning of leaves by the Delhi government in 1998?

2 What does PM10 stand for?

Team D

1 At ground level, what effect does ozone have on human beings?

2 During the 19th and the 20th centuries, which device was used to detect the presence of methane in coal mines?

Forest and biodiversity

Team A

3 Name the ingredient extracted from a deer that is used in medicines and perfumery?

4 Which tree yielding an anti-malarial drug was depleted from its natural habitat in South America?

Team B

3 Where in India will you see the wild ass?

4 Which ancient Indian text contains the rules and regulations on how to run a forest or *Abhiaranya*?

Team C

3 Which animal did the Pied Piper of Hamlin drive away?

4 Experiments with which animal resulted in the discovery of the Rh factor in the human blood?

Team D

3 Name the form of marine life that was used as a currency in India and elsewhere till the medieval period.

4 Name the form of treatment which relies upon odours of plants for healing.

Energy

Team A

5 Name the device used to tap the energy of flowing water?

6 With the beginning of the Industrial Revolution this fuel began to be used on a large scale. Name it.

Team B

5 Which energy source also produces a good quality fertilizer?

6 With which industry is bagasse-based power generation associated?

Team C

5 In ancient Persia, which device used wind energy to draw out water?

6 These are built across rivers to help generate electricity. What are they?

Team D

5 There are three qualities of coal: anthracite, lignite, and bituminous. Which is the most inferior?

6 In India, which state generates the maximum electricity from wind sources?

Global climate

Team A

7 What is the region around the equator where thunder storms and variable winds occur known as?

8 In what unit is the intensity of cyclones measured?

Team B

7 Where in India is the dormant volcano located?

8 What is Albedo?

Team C

7 Which coast of India experiences more cyclones: the east or the west?

8 What are cyclonic disturbances off the coast of Australia known as?

Team D

7 Which atmospheric layer contains the ozone shield?

8 Besides ozone, does any other gas shield the earth from incoming ultra violet radiation? If so, name it.

Land

Team A

9 Which rodent is the cause for the spread of plague?

10 Name the highly toxic mineral associated with the extraction of gold.

Team B

9 The root modules of leguminous plants convert nitrogen gas from air into inorganic nitrogen compounds that enrich the soil. What are the advantages of multiple cropping with legumes?

10 Name the two most identifiable crops of the green revolution in India.

Team C

9. Which famous book first raised questions about the harmful effects of DDT?

10 Name the activist who is spearheading the campaign against the Narmada valley project?

Team D

9 Which gold mine in India has been recently closed?

10 Pollution of air, water, and land has been the cause of increasing number of ailments. Which of these has been most responsible?

Water

Team A

11 What are the two major pollutants that the leather processing industry uses?

12 Name the primary food source for marine animal life.

Team B

11 Which river carries the maximum amount of sediments?

12 Name two harmful minerals that are not removed by a normal water filter used in households.

Team C

11 Which river in Bihar is known as the River of Sorrow?

12 Which fish was used as an indicator of the levels of toxic metals in the polluted wastes in Germany?

Team D

11 Which was the first multi-purpose river valley project in India?

12 Name the ecosystem that is essential for migratory birds but is fast depleting due to an increase in human activities.

Score sheet

ROUND 3

Topic / question	Team A		Team B		Team C		Team D	
	Answer	Score 5	Answer	Score 5	Answer	Score 5	Answer	Score 5
Air								
1	Fly ash /particulate matter		Due to incomplete burning of fuels/carbon		To reduce air pollution levels		It causes respiratory ailments	
2	LPG (liquefied petroleum gas)		Air (Prevention and Control of Pollution) Act, 1981		Particulate matter smaller than 10 microns in size		Davy's lamp	
Forest and biodiversity								
3	Musk		Rann of Kutch		Rats		Cowrie shells	
4	Chinchona		*The Arthashastra*		The Rhesus monkey		Aroma therapy	
Energy								
5	Water wheel (or water turbine)		Biogas		The Persian Wheel		Lignite	
6	Coal		Sugarcane		Dams		Tamil Nadu	
Global climate								
7	Doldrums		In the Andamans (Barren Islands)		The East coast		Stratosphere	
8	T number		The reflectivity of a planet to solar radiation		Woolie- woolies		No other gas	
Land								
9	Mice, rats, and others belonging to the rat family		Reduces the use of fertilizer as soil is already enriched		The *Silent Spring* by Rachel Carson		Kolar gold mines	
10	Mercury		Rice, wheat		Medha Patkar		Water	
Water								
11	Chemicals like sulphides and chromium salts		Ganga		Kosi river		Damodar valley project	
12	Phytoplankton		Nitrates and fluorides		Gold fish		Wetlands	

Round 4

Air

Team A

1 If CO (carbon monoxide) enters the bloodstream, what compound is formed that inhibits the blood's ability to carry oxygen?

2 Which human habit is the chief source of benzene in homes, a well-known carcinogen?

Team B

1 Why are higher levels of CO emitted from vehicles in the hills?

2 Atoms of which element are released by CFCs (chloroflorocarbons) that destroy the ozone layer?

Team C

1 Which type of ultraviolet radiation is potentially most dangerous, but is completely absorbed by the ozone layer and oxygen?

2 Name any one pollutant emitted by vehicles that cannot be controlled by emission control technologies such as catalytic converters.

Team D

1 What is measured in Dobson units?

2 Which cookstove could substantially reduce indoor air pollution in rural areas where wood or dung is used as fuel?

Forest and biodiversity

Team A

3 Which is the only continent where there are no reptiles or snakes?

4 The lion's 'last bastion' in India is Gir in Gujarat. There is a proposal to translocate it. Name the proposed location.

Team B

3 In which type of forests is the species diversity the greatest?

4 The excreta of seabirds are known as guano. Is it used as a pesticide or a a fertilizer?

Team C

3 During its lifetime, how many times does the banana plant flower?

4 Which animal is killed to make the *shahtoosh* shawl?

Team D

3 Which international organization joined hands with the Government of India and the IUCN (International Union for Conservation of Nature a Natural Resources) to implement Project Tiger?

4 From which bird is eiderdown, a quilt stuffing, obtained?

Energy

Team A

5 What is meant by 'cogeneration'?

6 What is the main constituent in domestic cooking gas (liquefied petroleum gas)?

Team B

5 Which Asian country has one-third of the world's known coal reserves?

6 Which is the most common non-commercial biological fuel in most developing countries?

Team C

5 What does a solar roof contain?

6 Which was the first hydel project in India to be shelved due to environmental factors? (Hint: it was proposed to be in the state of Kerala)

Team D

5 One reason why CNG (compressed natural gas) is being considered an 'environment-friendly fuel' is because the noise levels are low. State any two other reasons.

6 These structures have to be installed to generate energy from the wind. Name them.

Global climate

Team A

7 This person received the Nobel Prize twice for the work done in radiation but ultimately died of cancer, which was caused due to over exposure to radioactive rays. Name the person.

8 Coral reefs act as a natural sink for this gas that causes global warming. Name the gas.

Team B

7 What cools the atmosphere by blocking incoming solar radiation?

8 Which activist associated with the Chipko movement is a Magsaysay Award winner?

Team C

7 Which natural phenomenon is based on refraction: rainbow or polar light?

8 Which of the following sectors is the biggest contributor to greenhouse gas emissions in India: transport or energy?

Team D

7 When was the ozone hole first discovered?

8 What is the full form of IPCC?

Land

Team A

9 In 1993, where in Maharashtra did an earthquake occur causing extensive damage?

10 What is biomagnification?

Team B

9 Where in India is Nek Chand's Rock Garden, an exquisite artwork made of waste located?

10 Improper disposal of household tube lights cause pollution of the soil as it releases this element which is harmful to health. Name the element.

Team C

9 In this process, earthworms are used to convert organic wastes into manure. What is this method known as?

10 What is another term for tissue culture?

Team D

9 Where should a landfill for waste disposal be built: above or below the groundwater table?

10 Which element is depleted most from the soil after a crop is harvested?

Water

Team A

11 What is potentially the most common danger of groundwater recharging by rainwater?

12 State the method employed to disinfect drinking water at the municipal level.

Team B

11 Which two rivers form the largest delta in the world?

12 Seabirds die in large numbers after an oil spill. One reason is that they swallow some of the oil when they are drinking water or catching fish. Give the other reason.

Team C

11 Which two states have a dispute over the sharing of the waters of the river Cauvery?

12 Of the four major water bodies on earth, which is both the largest and the deepest?

Team D

11 Seawater contains two important gases that help to sustain its marine life. Name them.

12 Name the Indian state that has the highest fluoride content in its groundwater.

Score sheet

ROUND 4

Topic / question	Team A		Team B		Team C		Team D	
	Answer	Score 5	Answer	Score 5	Answer	Score 5	Answer	Score 5
Air								
1	Carboxyhemeglobin (COHb)		Thin air, thus less O_2 is available for combustion		Ultra violet – C (type C)		Column ozone	
2	Tobacco smoking		Chlorine		CO_2/ SO_2		Improved or smokeless *chulahs* (cookstoves)	
Forest and biodiversity								
3	Antarctica		Rain forest		Once		WWF (World Wide Fund) for Nature	
4	Kuno in Madhya Pradesh		Fertilizer		The Chiru antelope or the Tibetan antelope		Duck, the eiderduck	
Energy								
5	Joint generation of power and heat		China		Photovoltaic panels / cells		Lowest emission of toxic gases and increased life of the engine	
6	Butane		Fuelwood / wood / twigs / branches		Silent Valley		Windmills	
Global climate								
7	Madame Curie		Stratosphere dust and aerosols / clouds		Rainbow		In 1985	
8	Carbon dioxide		Chandi Prasad Bhatt		Energy		Intergovernmental Panel on Climate Change	
Land								
9	Latur		Chandigarh		Vermicomposting or vermiculture		Above	
10	Accumulation of toxins through the food chain		Mercury		Cloning		Potassium	
Water								
11	Contamination of ground water		Ganga and Brahmaputra		Tamil Nadu and Karnataka		Dissolved oxygen and dissolved carbon dioxide	
12	Chlorination		The oil gets on their wings and prevents them from flying		Pacific ocean		Rajasthan	

Round 5

Air

Team A

1 Through which system of the body do air pollutants enter?

2 Particulate matter is releazed into the atmosphere during this process of solid waste disposal. What is this process?

Team B

1 Cataract causes damage to the eye including blindness. What is its main cause?

2 Acid rain is caused primarily by two gases. One of them is sulphur dioxide. Name the second gas.

Team C

1 Which, according to the World Health Organization, is the most serious air pollutant across the world that kills about 460 000 people each year?

2 Of which two gases is biogas a mixture?

Team D

1 Name the refinery from which emissions are said to have caused damage to the Taj Mahal.

2 Particulate matter in diesel exhaust is coated with PAH that is highly carcinogenic if inhaled regularly. What does PAH stand for?

Forest and biodiversity

Team A

3 In which European country does the matador still kill bulls for sport?

4 What are plants that use other plants as support while growing called?

Team B

3 From which tree is Margosa oil, used in the treatment of skin diseases, derived?

4 If you are a herpetologist, what creatures would you be studying about?

Team C

3 What do these birds–pink headed duck, the hooded crane, and the black browed parrot bill–have in common?

4 In which season of the year does the growth of plants and trees slow down?

Team D

3 Since times immemorial, this creature has been used to treat madness, skin disease, gout, tumors, and many other diseases? Name the creature.

4 Name the Indian national park immortalized by Rudyard Kipling in his *Jungle Book*.

Energy

Team A

5 Name the country that has installed the largest number of biogas plants in the world?

6 Which regions of oceans and seas are mined for petroleum?

Team B

5 Which element, found abundantly in the earth's crust, is used in solar cells to produce electricity?

6 Which country has the highest installed wind power capacity?

Team C

5 What type of energy is possessed by the wind?

6 Name the area in India that has the most promising geothermal field, where an experimental 1 kW generator is already in operation.

Team D

5 In which two places in India are diesel locomotive engines manufactured?

6 What has been the main reason for the increase in atmospheric carbon dioxide?

Global climate

Team A

7 Which gas was releazed during the Bhopal gas tragedy?

8 Which among the following would suffer most from a global sea level rise: Bangladesh, India, or Pakistan?

Team B

7 Name the scientist who laid the foundation of nuclear science in India.

8 Which meteorological phenomenon occurs frequently over the Bay of Bengal?

Team C

7 Over which continent was the massive hole in the ozone layer first discovered?

8 Who first determined the size of the earth correctly?

Team D

7 In which year was the first Earth Day celebrated?

8 In which city did the world's worst nuclear disaster take place?

Land

Team A

9 The expansion of agriculture has led to stagnant water, which in turn has led to the spread of this deadly parasite-based disease in the tropical countries. Name it.

10 What is responsible for the breaking down of decaying matter into humus: bacteria or fungus?

Team B

9 Which element (it is also used in thermometers) is associated with the phrase 'mad as a hatter'?

10 Clay brick activities have had an ill-effect on the environment. One is that it pollutes the air. What is the other?

Team C

9 When a plant is considered for tissue culture, one prerequisite is that it has to be disease-free. What is the other?

10 Which worm is called the friend of the farmer?

Team D

9 Which continent was the last to be polluted by man?

10 Name a commercially used and genetically modified cotton plant resistant to the deadly cotton pest, 'heliothis'.

Water

Team A

11 This human activity has caused maximum damage to the coral reefs in the Andaman and Nicobar Islands. What is this activity?

12 Name the professor who is also a priest and is spearheading the cleaning of the Ganga at Varanasi.

Team B

11 Which state in India leads in respect to canal irrigation?

12 How does increased turbidity in water lead to the bleaching of corals?

Team C

11 Name the controversial dam being built on the river Bhagirathi.

12 This polluting chemical has been found occurring naturally in the water in 6 districts in West Bengal. It has caused an increase in the cases of cancer of the skin and vascular diseases. Name it.

Team D

11 Where did the Exxon Valdez oil spill occur?

12 'Water softeners' are chemicals used in synthetic detergents. These have a chemical which, when released in water bodies, leads to eutrophication. Name the chemical.

Score sheet

ROUND 5

Topic / question	Team A		Team B		Team C		Team D	
	Answer	Score 5	Answer	Score 5	Answer	Score 5	Answer	Score 5
Air								
1	The respiratory system		Ultra violet radiation		SPM or suspended particulate matter		Mathura Refinery	
2	Incineration		Nitrous oxide		Methane and carbon dioxide		Polycyclic aromatic hydrocarbons	
Forest and biodiversity								
3	Spain		Neem		They are all extinct		Leech	
4	Epiphytes		Amphibians and reptiles		Winter		Kanha National Park	
Energy								
5	China		Silicon		Kinetic energy		Varanasi and Chittaranjan	
6	Continental shelves		The Netherlands		Puga Valley in Ladakh		Use of / burning of fossil fuels	
Global climate								
7	Methyl isocyanate		Homi Jehangir Bhabha		Antarctica		1970	
8	Bangladesh		Cyclone		Eratosthenes		Chernobyl (former USSR)	
Land								
9	Malaria		Mercury		It should have high productivity		Antarctica	
10	Bacteria		Causes land degradation		Earthworm		Bt. Cotton	
Water								
11	Release of domestic effluents or sewage		Uttar Pradesh		Tehri Dam		Off the coast of Alaska, USA	
12	Veer Bhadra Mishra		Decreases the quality of light required for algae growth that give corals their colour		Arsenic		Phosphates	

Round 6

Air

Team A

1 Which Mughal emperor forbade smoking among his courtiers after he realized its harmful effects?

2 Which gas is used in multi-coloured display signs seen at night?

Team B

1 Which pollutant in the air causes hay fever?

2 Besides the tail pipe exhaust, what is the other prominent source of pollution from vehicles?

Team C

1 Which group of plants exchanges carbon dioxide for oxygen at night?

2 Name a radioactive gas that is released from soil.

Team D

1 Why is natural gas compressed?

2 Which gas does divers mix with oxygen in aqualungs?

Forest and biodiversity

Team A

3 Which nutrient-rich substance found in soil is formed as a result of decomposition of plants and animals?

4 Name the pet animal brought to Australia from Europe, which led to the near extinction of many species of bandicoots.

Team B

3 Which region in the Himalayas has been immortalized by Jim Corbett's hunting tales?

4 Which animal found in the St. Lawrence river qualifies as hazardous waste when it dies?

Team C

3 The Olive Ridley turtles are the smallest marine turtles. Which are the largest?

4 Which capital city in Europe has a dancing school for horses?

Team D

3 Why is the Keibul Lamjao National Park in Loktak Lake famous?

4 Name the association where only one organism benefits totally at the expense of the other.

Energy

Team A

5 Name two of the main constituent gases given out by a gasifier using wood?

6 In context to renewable energy, what are firewood, cattle dung, garbage and agricultural residue termed as?

Team B

5 In the renewable energy sector, this is an important and abundant source of energy. It is better known as OTEC. What does this stand for?

6 This is a renewable source of energy lying below the surface of the earth, found mainly in the hot rocks, geysers, and volcanoes. Name it.

Team C

5 Which country consumes the highest quantity of petroleum?

6 Which sugar cane derived product can be used as an alternative fuel for vehicles?

Team D

5 Which fuel is used in fuel cells?

6 Name the country that has the largest solar energy programme in the world.

Global climate

Team A

7 *The Desolate Year* was published by the chemical industry in response to which pro-environment book?

8 Twice a year, the earth experiences exactly equal duration of days and nights. What term is used for these days?

Team B

7 Which chemical causes the disease Minimata ?

8 Are cyclones formed in areas of low pressure or high pressure?

Team C

7 Name a fluorocarbon that can substitute CFC's with comparatively lower ozone-depleting potential?

8 Which natural phenomenon release large quantities of particulate matter, sulphur dioxide, and other gases into the atmosphere?

Team D

7 Called the 'little boy' in the local language, this natural phenomenon occurs in the Pacific Ocean. Name it.

8 Name the landmark protocol that stated that the industrialized or Annexe I countries will have to collectively reduce their greenhouse gas emissions in the next 15 years. (Hint: it is not the Montreal Protocol)

Land

Team A

9 Which method of pest control does not attempt to eradicate pests but aims to maintain pest populations below acceptable levels by incorporating preventive measures like planting resistant varieties and crop rotation?

10 Which is considered to be the largest slum in India?

Team B

9 Which item has the International Maritime Organization completely banned from disposal into the sea?

10 In 1984/1985, which African country went through a drought that took over a million lives?

Team C

9 Which place in Orissa is notorious for deaths due to starvation?

10 In India, which crop heralded the green revolution?

Team D

9 Low intake of this element in the diet leads to goitre. Name this element.

10 Which city in India was first to be struck by the bout of plague in 1994?

Water

Team A

11 Name the dam that has been responsible for the success of the Green Revolution in Punjab.

12 BOD is the measure of the health of a river. What is its full form?

Team B

11 Name the Indian scientist who brought to light the fact that termite mounds were indicators of groundwater.

12 Which small-scale industry in Agra has caused a great deal of pollution of the Yamuna river?

Team C

11 Presence of this in drinking water causes 'blue baby syndrome' in small babies. Name it.

12 Which lawyer filed a petition in the Supreme Court leading to the closure of tanneries in Agra?

Team D

11 Where are the majority of our freshwater sources trapped?

12 Which compound, a water pollutant, is commonly found in both fertilizers and detergents?

Score sheet

ROUND 6

Topic / question	Team A		Team B		Team C		Team D	
	Answer	Score 5	Answer	Score 5	Answer	Score 5	Answer	Score 5
Air								
1	Jehangir		Pollen		Cactii		To facilitate storage and easy transport	
2	Neon		Evaporated gasoline		Radon		Helium	
Forest and biodiversity								
3	Humus		Kumaon		Leather back		It is the only floating game sanctuary in the world	
4	Cat		Beluga whale		Vienna (in Austria)		Parasitism	
Energy								
5	Carbon monoxide / methane / hydrogen		Ocean Thermal Energy Conversion		USA		Hydrogen, methane, or carbon monoxide	
6	Biomass		Geothermal energy		Ethanol		India	
Global climate								
7	*Silent spring* by Rachael Carson		Mercury		Synthesized HFC (hydrofluorocarbon)		El Nino	
8	Equinox		Low pressure		Volcano		The Kyoto Protocol 1997	
Land								
9	Integrated pest management (IPM)		Plastics		Kalahandi		Iodine	
10	Dharavi in Mumbai		Ethiopia		Wheat		Surat	
Water								
11	Bhakra Nangal Dam		Varahamihira		Nitrates mainly from fertilizers		Icecaps and glaciers	
12	Biochemical oxygen demand		Tannery or leather		M C Mehta		Phosphates	

Round 7

Air

Team A

1 Chemical warfare involves the use of toxic substances: gas, liquid, or solid to kill or disable, pollute food, poison water and supplies or any other military use of chemicals. When were chemical weapons first used on a large scale?

2 What is the main emission from hydrogen fuel cells?

Team B

1 Which type of cancer is caused due to the direct harmful ultraviolet radiation of the sun?

2 Sarin, a nerve gas, was used by terrorists to kill subway commuters in this city. Name the city.

Team C

1 Which is the largest group of pollutants released from 2-stroke engines?

2 The presence of this element in diesel causes increased emission of particulate matter. Name this element.

Team D

1 Why is reduced amount of biogas formed in winters?

2 Which is the most toxic chemical released when chlorinated plastics like PVC (polyvinyl chloride) are burnt?

Forest and biodiversity

Team A

3 What is the term used for the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings?

4 Name the national park supplying about 20% of Mumbai city's drinking water?

Team B

3 Japan is the largest buyer of ivory. What is it mainly used for in that country?

4 Salim Ali is a renowned ornithologist. What does an ornithologist study?

Team C

3 During the medieval period, more than 350 people from this community lost their lives protecting the Khejri trees. They are also well known for the protection given to wildlife especially the wild buck, in the area around their villages. Name the community.

4 For which part of its body is a rhino killed by poachers?

Team D

3 Ectoparasites live outside the host body. How does the endoparasite differ from it?

4 Which country imposed sanctions against Indian fish exports till Indian trawlers used nets with turtle excluding devices?

Energy

Team A

5 It is the part of sugar cane that is left after the juice is extracted and it is an important source of biomass energy. What is it known as?

6 Solar energy is an important source of renewable energy. Which country has the largest solar cooker programme?

Team B

5 Hydel energy is one of the major sources of renewable energy today. The first micro hydel plant was set up in 1897 in India in this town. Name of the town.

6 CFCs (chlorofluorocarbons) have contributed to global warming. Name one way in which they are used.

Team C

5 Which of the following would be ideal for the location of a solar pond: coastal area or inland?

6 What are fine particles of ash that arise due to the burning of coal known as? (Hint: the largest emitters of this are the coal-based thermal power plants)

Team D

5 The presence of which pollutant makes smoke visible?

6 Which is the largest petroleum refinery in India?

Global climate

Team A

7 Which university in India was the first to introduce a course in environmental education?

8 The exposure of CFCs (chlorofluorocarbons) to ultra violet radiation in the stratosphere releases chlorine which destroys ozone by converting it into something else. What is the converted form?

Team B

7 What does GEF stand for?

8 In the year 1883, which volcanic eruption brought about major weather changes the world over?

Team C

7 Which greenhouse gas was also used earlier by dentists as an anesthesia?

8 In certain countries, rockets or anti-aircraft shells are fired into storm clouds. Why?

Team D

7 What was the code name of the first atom bomb dropped over Japan?

8 The release of which greenhouse gas is associated with rice cultivation, landfills, and cud chewing domestic animals?

Land

Team A

9 This mineral fibre is used to make firemen's suits as it is fire resistant. Name it.

10 Deficiency of vitamin B or thiamine is very common in areas where the staple diet is polished rice. Name the most common disease caused by this deficiency.

Team B

9 Ceramic crockery, if not put through the recommended high temperature, could transfer a toxic element to the food taken from it. Name this toxic element.

10 This convention, held in 1989, was the first global forum for regulating the trans-boundary movement of hazardous wastes among countries and their disposal. What was this known as?

Team C

9 Name the protein produced by cow that is artificially injected to regulate their growth and milk supply.

10 Name the scientist who won the Nobel Prize for developing a high-yielding variety of wheat.

Team D

9 Mining of which ore is predominantly responsible for a great deal of air and land pollution in Goa?

10 What are the nitrogenous plants that convert nitrogen gas from the air into inorganic nitrogen compounds that enrich the soil known as? They are often used as a rotation crop.

Water

Team A

11 What is the term for measuring concentration of disease-causing micro-organisms in water?

12 The Ganga Action Plan was initiated in three states through which the river flows. Two of the states are Bihar and Uttar Pradesh. Name the third.

Team B

11 Which inland lake, once considered the fourth largest in the world, has witnessed a 13% drop in its water level and a loss of about 24 of its native fish species, due to the onslaught of irrigation?

12 Which fertilizer is the most used in India and causes algae blooms and eutrophication of water bodies?

Team C

11 This toxic element is commonly found in old water pipes. Name it.

12 What is the activity of breeding and cultivating prawns and other marine species under controlled conditions known as?

Team D

11 Excess fluoride in drinking water is known to cause a disease that is a major health problem in many parts of India. The main symptoms are yellow teeth and crippling bones. Name this disease.

12 The water of this sea has the highest density and the sediments are used as mud packs. Name this sea.

Score sheet

ROUND 7

Topic / question	Team A		Team B		Team C		Team D	
	Answer	**Score 5**	**Answer**	**Score 5**	**Answer**	**Score 5**	**Answer**	**Score 5**
Air								
1	First World War (1914 –1918)		Skin cancer		Hydrocarbons		Bacterial activity is lower in colder temperatures	
2	Water vapour		Tokyo		Sulphur		Dioxins	
Forest and biodiversity								
3	In situ conservation		Ivory is used to make Hanko, the Japanese signature seal		Bishnois		It lives inside the host body	
4	Borivili National Park		Birds		The horn		USA	
Energy								
5	Bagasse		Darjeeling		Coastal area (due to the requirement of salt)		Particulate matter	
6	India		In refrigeration / solvents / sprays / aerosols		Fly ash		Jamnagar Refinery in Gujarat	
Global climate								
7	Vishwa Bharati University in Shanti Niketan		Global Environment Facility		Nitrous oxide		Little boy	
8	Oxygen		Krakatoa in Indonesia		To break the ice in the clouds so that it does not harm the crops		Methane	
Land								
9	Asbestos		Lead		Bovine somatotropin		Iron ore	
10	Beriberi (inflammation of the nervous system)		The Basel Convention		Norman Borlaug		Leguminous plants	
Water								
11	Coliform count		The Aral Sea in Uzbekistan		Lead		Fluorisis	
12	West Bengal		Nitrogenous		Aquaculture		Dead Sea	